

REMARKS**Introduction**

In response to the Office Action dated October 15, 2007, Applicants have amended claim 2. Care has been taken to avoid the introduction of new matter. Claim 5 has been withdrawn. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

As a first procedural matter, Applicants note that the Office Action contains copies of information disclosure statements (IDS), form PTO-1449 submitted on September 8, 2005, January 17, 2007, and April 18, 2007. However, the copies of are not signed, and do not contain the Examiner's initials next to each reference. Thus, the record does not indicate that the Examiner reviewed this references.

Thus, Applicants request that the Examiner sign each IDS, initial each reference, and attach copies to the next Office Action, in order to clarify the record.

As second procedural matter, Applicants wish to clarify the status of claim 4. The Restriction dated August 20, 2007 required election between group I (claims 1-4) and group II (claim 5). Applicants elected group I (claims 1-4) in the Election dated September 20, 2007.

Further, the Restriction required the election of one specific inorganic filler composition, as set forth in original claims 2 and 3. In the Election dated September 20, 2007, Applicants selected titanate as the selected species. In the above amendments, Applicants have amended claim 2 to select titanate as the selected species, in the following fashion, "the inorganic filler having a high dielectric constant comprises ~~titanium oxide, a zirconate, or a mixture thereof~~, a **titanate**, ~~a zirconate, or a mixture thereof~~. Thus, the inorganic fillers of titanium oxide, and zirconate have not been elected.

Please note that the Election dated September 20, 2007 contains a typographical error. The Election, at page 2, states, “claims 1, 2, and 4 are readable on the elected species.” This sentence should read, “**claims 1, 2, 3, and 4** are readable on the elected species.” Note that dependent claim 4 further limits dependent claim 3 by reciting specific types of titanates.

Thus, group I including claims 1-4 is elected, and titanates are elected. Only claim 5 is withdrawn.

Further, the Restriction dated August 20, 2007, states that claim 1 is a generic claim, and that Applicants are entitled to consideration of claims to additional species which depend from an allowable generic claim.

Claim Rejection Under 35 U.S.C. § 103

Claims 1, 2, and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants’ Admission (at paragraphs [0012-0023] of U.S. Patent Publication 2006/0165971 in view of Honkanen (U.S. Patent 3,099,045). This rejection is traversed.

Independent claim 1 recites, in part, “wherein at least a foamed dielectric layer having a dielectric constant of 1.5 or more is formed using **the pre-expanded beads that have been subjected to classification and selection such that $f(A)$ satisfies the expression $0.0005 \leq f(A) \leq 0.1$, where $f(A)$ is represented by the equation: $f(A) = \sigma a / A_{ave}$, σa is the deviation of a gas volume fraction A_r in the foamed dielectric layer, and A_{ave} is the average of the gas volume fractions A_{rs} at positions in the foamed dielectric layer.**”

FIGS. 5 and 6 of the instant application provide non-limiting example of gas volume fractions.

In order to establish *prima facie* obviousness under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. *In re Rokya*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974). Further, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F. 3d 977, 988 (Fed. Cir. 2006). At a minimum, the cited prior art does not disclose (expressly or inherently) the above recited limitation.

The Office Action, at page 3, asserts that all of the limitations of claim 1 are disclosed by the combination of Applicants’ Admission (at paragraphs [0012-0023] of U.S. Patent Publication 2006/0165971 and Honkanen. However, the Office Action does not expressly discuss the claim 1 limitation **“the pre-expanded beads that have been subjected to classification and selection such that $f(A)$ satisfies the expression $0.0005 \leq f(A) \leq 0.1$, where $f(A)$ is represented by the equation: $f(A) = \sigma a / A_{ave}$, σa is the deviation of a gas volume fraction A_r in the foamed dielectric layer, and A_{ave} is the average of the gas volume fractions A_{rs} at positions in the foamed dielectric layer.”**

Applicants’ Admission, for example, at paragraph [0012], states merely:

[0012] A typical Luneberg lens is composed of a plurality of foamed dielectric layers prepared by foaming polystyrene (PS). However, in this lens, PS has a dielectric constant of 2.5, and each layer has a dielectric constant of 1 to 2; hence, the expansion ratio is low. Specifically, at a dielectric constant of 1.2 or more, the expansion ratio is 5 or less. At a dielectric constant of 1.4 or more, the expansion ratio is 3 or less. At a dielectric constant of 1.65, the expansion ratio is 2 or less. In this way, the expansion ratio is very low. The expansion ratio of a typical foamed product is generally 20 to 50 times. At an expansion ratio of 5 or less, it is difficult to conduct forming. Therefore, it is difficult to produce a uniformly foamed product at such low expansion ratios as described above. In order to constitute a Luneberg lens by combining dielectric layers foamed at such low expansion ratios, it is necessary to control the expansion ratio of each layer with an accuracy of 0.1 times. Therefore, it was very difficult to achieve a dielectric constant as designed.

Thus, Applicant's Admission does not teach or suggest the above recited limitation of claim 1.

Further, Honkanen, at column 1, lines 41-45 merely states:

Furthermore, where it is desireable to have beads of substantially uniform size it can be accomplished by **initially grading the pre-expanded beads according to size** and using beads of a uniform size as the molding material.

Thus, Honkanen merely grades according to size, does not teach or suggest the above recited limitation of claim 1.

Thus, at a minimum, the combination of Applicants Admission and Honkanen fails to teach or suggest the forgoing limitation, and therefore claim 1 is allowable over the cited art.

Under Federal Circuit guidelines, a dependent claim is allowable if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987).

Thus, as independent claim 1 is allowable for the reasons set forth above, it is respectfully submitted that dependent claims 2-4 are allowable for at least the same reasons.

Conclusion

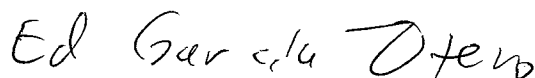
In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

10/548,405

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

A handwritten signature in black ink that reads "Ed Garcia-Otero". The signature is written in a cursive, flowing style.

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